

# **EXHIBIT CA**

**To:** jlabarre@google.com[jlabarre@google.com]  
**Cc:** Mark Triplett[Mark.Triplett@sonos.com]  
**From:** Chris Butts[chris.butts@sonos.com]  
**Sent on behalf of:** Chris Butts <chris.butts@sonos.com>  
**Sent:** Wed 10/26/2016 11:33:12 AM Eastern Daylight Time  
**Subject:** Presentation  
**Attachment:** Google Deck 2016.10.25.pdf

---

Hi John, Please see attached.

**Chris Butts**  
Sonos Intellectual Property | m: 312-498-2414 | [chris.butts@sonos.com](mailto:chris.butts@sonos.com)



**Sonos & Google IP | Oct 2016  
FRE 408**

## Agenda

- 1. Google Objectives**
- 2. Sonos Objectives**
- 3. Recap Overview of Sonos Patent Portfolio**
- 4. Use Sonos Taxonomy to Better Understand IP landscape**

## Sonos Objectives

- **Help Google Understand how Sonos Patents cover Playing Audio from the Internet, Out-Loud, Throughout the Home**
- **Sonos Gains Mutual Understanding of IP Landscape To Enable Even Stronger Relationship With Google**

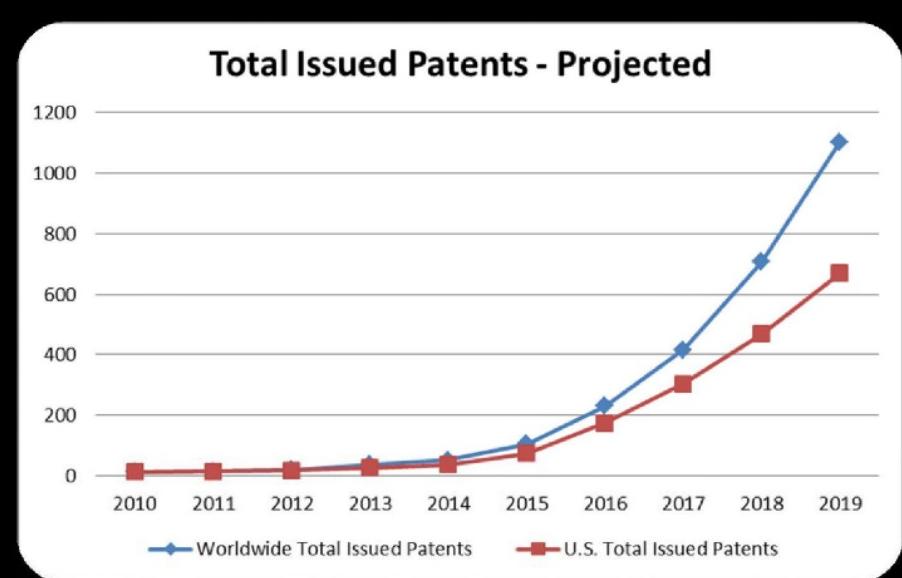
## Recap Overview of Sonos Patent Portfolio

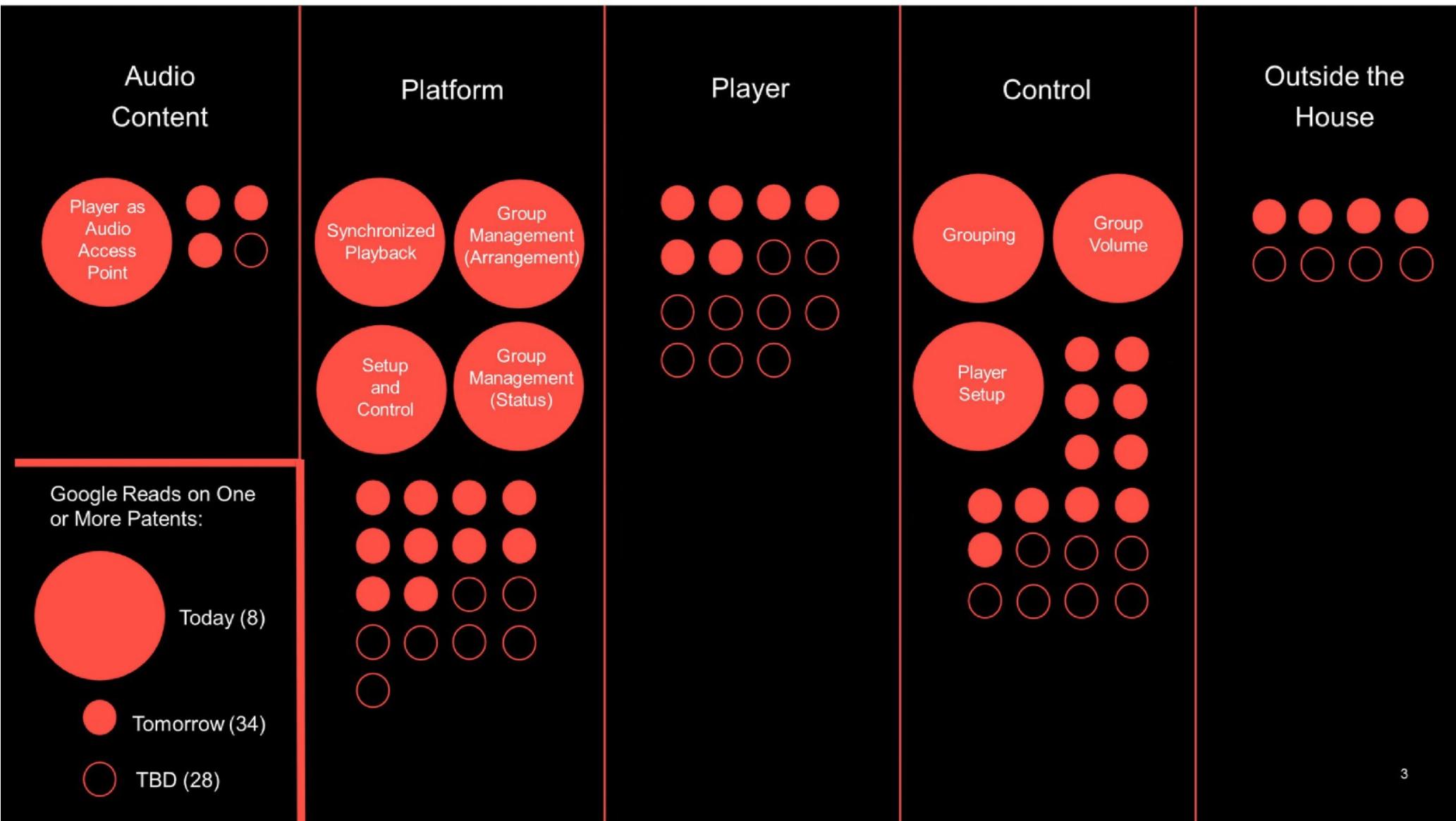
**~230 US Patents Issued or Allowed**

**~600 US, ~1000 Worldwide, Assets**

**~3 New US Patents per week**

**>50% of Patents practiced by Sonos  
and/or Third Party**





## Use Sonos Taxonomy to Better Understand IP landscape

### Audio Content



(2 relevant patents, 1 disclosure)

### Control



(7 relevant patents, 3 disclosures)

### Platform



(11 relevant patents, 3 disclosures)

### Player



(3 disclosures)

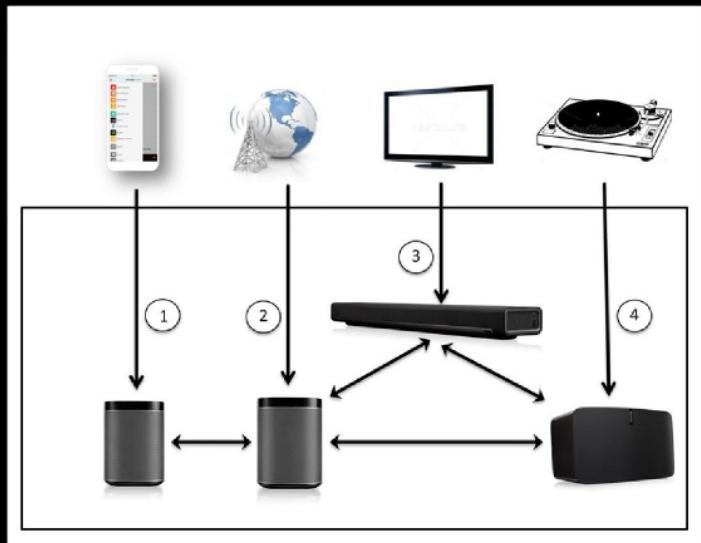
### Outside the Home



(1 disclosure)

*20 relevant patents, and a variety of additional especially relevant disclosures, identified*

## Audio Content – Getting Audio from a Source to a Sonos System



## Patents Relevant To Google Today

U.S. 9,213,357    U.S. 9,189,011

(Audio Distribution)

## Additional Disclosure

U.S. 8,938,312

(Line-In Switching)

- 1 Mobile to HH
- 2 Player to HH, LAN/WAN Connection
- 3 Player to HH, Video Audio Direct Connection
- 4 Player to HH, Music Direct Connection

## Audio Content – Getting Audio from a Source to a Sonos System

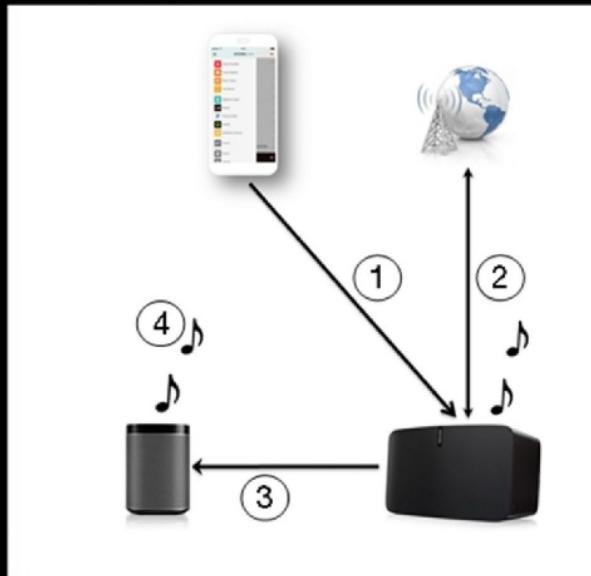
US Pat. 9,213,357

Priority 2003

Issued 2015

20 claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Receiving an address identifying a location of audio available at a source outside of the LAN
- ② Obtaining audio information using address
- ③ Send audio, playback timing, and device clock information to another player
- ④ Playing the audio by the players in synchrony

## Audio Content – Getting Audio from a Source to a Sonos System

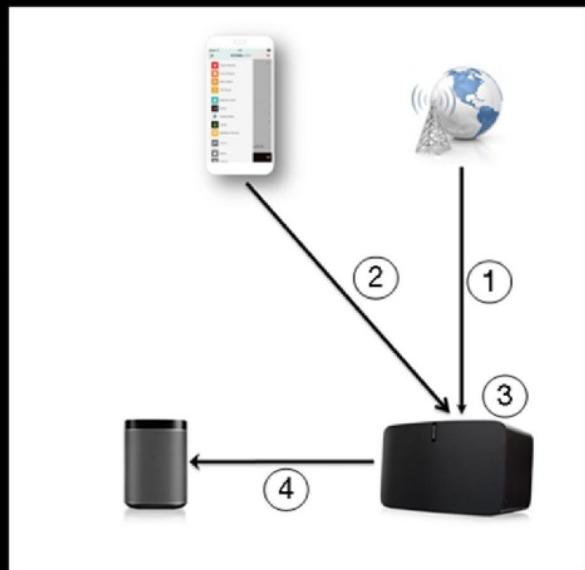
US Pat. 9,189,011

Priority 2003

Issued 2015

20 claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Receive audio information
- ② Receive control input
- ③ Configure player to transmit audio and device clock information to another player, generate frames where each frame includes some audio and playback timing information
- ④ Transmit the frames and device clock information to the other player

## Audio Content – Getting Audio from a Source to a Sonos System

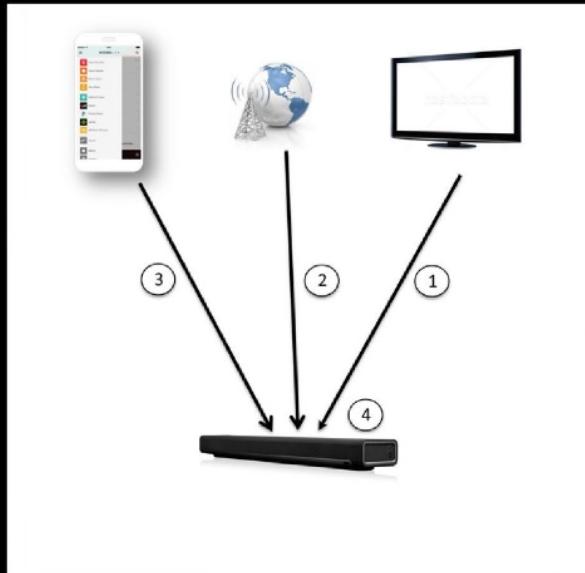
US Pat. 8,938,312 [ADDITIONAL DISCLOSURE]

Priority 2011

Issued 2015

20 claims (see the patent for complete claim language)

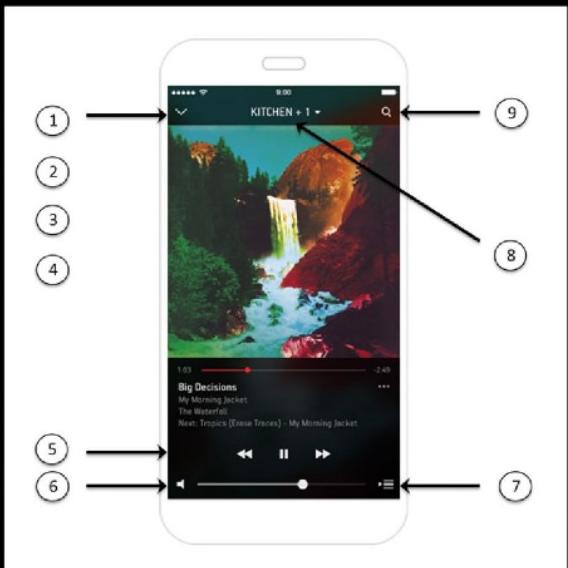
Example claim 1 involves:



- ① Determine line-in audio signal present
- ② Cease playback of prior audio signal
- ③ Receive instruction to stop playback of line-in audio
- ④ Arm player such that reception of a subsequent line-in audio is played



## Control – Controls a Sonos system



- ① Setup
- ② Household Dashboard
- ③ Discover Content
- ④ Social
- ⑤ Playback
- ⑥ Volume
- ⑦ Queue
- ⑧ Grouping
- ⑨ Find

## Patents Relevant To Google Today

U.S. 9,164,532	U.S. 9,218,017	(Group Formation)
U.S. 8,588,949	U.S. 7,571,014	(Group Volume Control)
U.S. 9,344,206	U.S. 8,843,228	(Grouping with Zone Scenes)
U.S. 8,930,005		(Setup Using Inaudible Tones)

## Additional Disclosure

U.S. 14/520,566*	(Playback Transfer)
U.S. 8,326,951	(Household Setup)
U.S. 13/338,724	(Auto Content Selection for Zone)

\*Relevant Allowed Claims

## Control – Controls a Sonos system

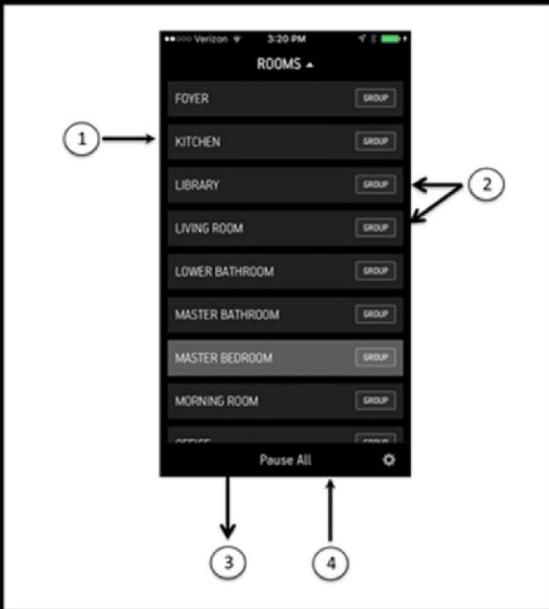
US Pat. 9,164,532

Priority 2003

Issued 2015

34 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Identify and display zones on a screen
- ② Receive a command to form a zone group
- ③ Configure the zone group where a player of the group transmits audio, playback timing, and device clock information to the other players in the group
- ④ Receive status information from one of the players in the group

## Control – Controls a Sonos system

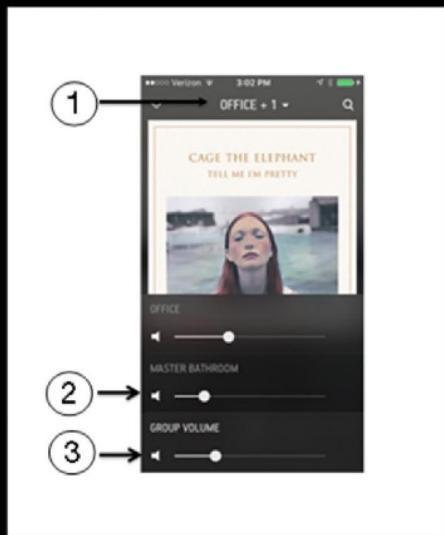
US Pat. 8,588,949

Priority 2004

Issued 2013, Reexam Certificate 2015

20 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Display UI for player group, and receive input to facilitate formation of the player group
- ② Receive input to adjust volume for one of the players that causes the player to adjust its volume
- ③ Receive input to adjust volume associated with player group that causes the players to adjust their volumes

## Control – Controls a Sonos system

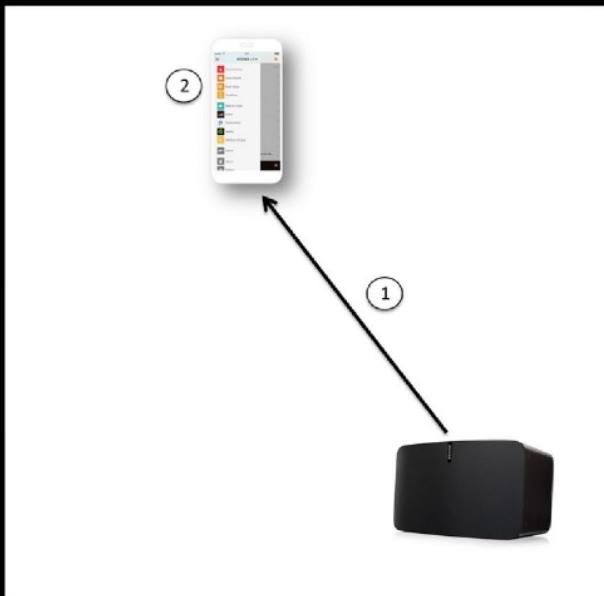
US Pat. 9,344,206

Priority 2007

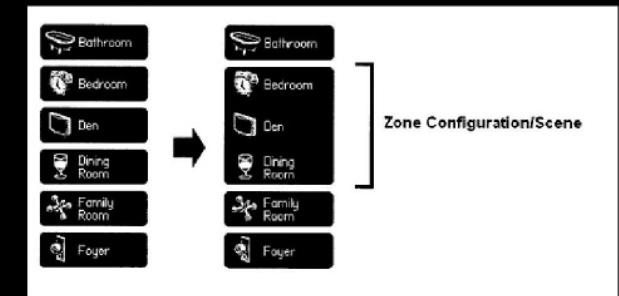
Issued 2016

20 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Receiving, from a playback device, a grouping configuration including a zone scene stored by the playback device, where the controller configured the stored grouping configuration
- ② Display a selectable indication of the grouping configuration, where the selectable indication is selectable to cause the zone scene to be invoked



## Control – Controls a Sonos system

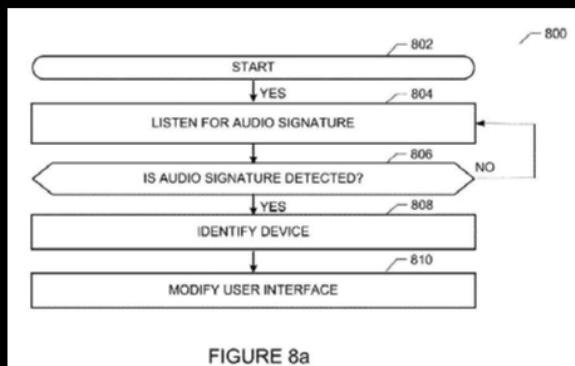
US Pat. 8,930,005

Priority 2012

Issued 2015

20 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Detecting a playback device based on an acoustic signature
- ② In response to detecting the acoustic signature, modifying a user interface

## **Control – Controls a Sonos system**

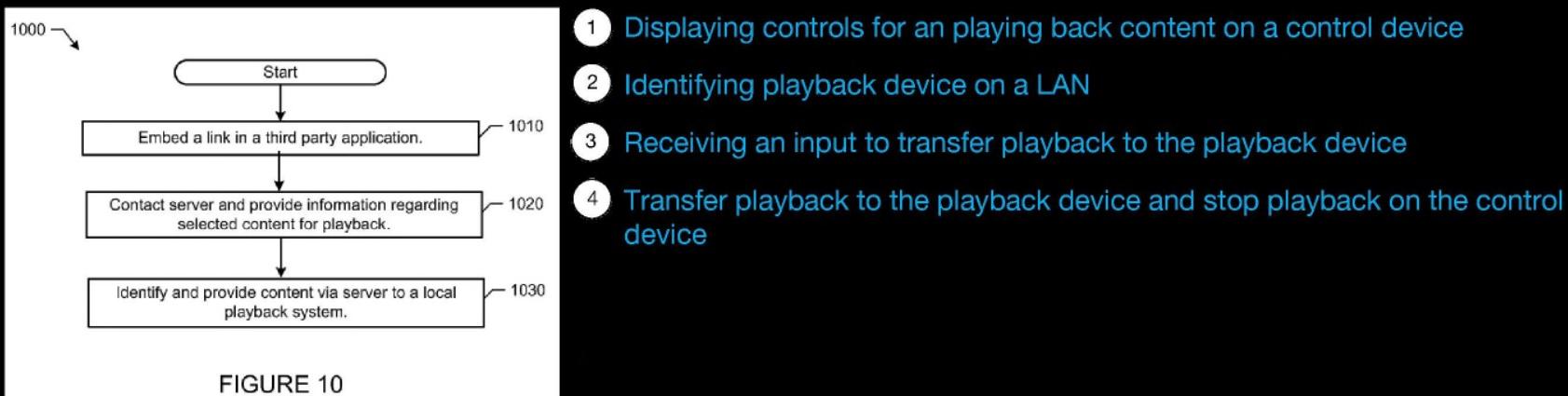
US App. 14/520,566\* [ADDITIONAL DISCLOSURE]

Priority 2011

Will Issue 2016

20 Claims

Total of 5 pending applications either allowed or in late stage of prosecution generally involving:



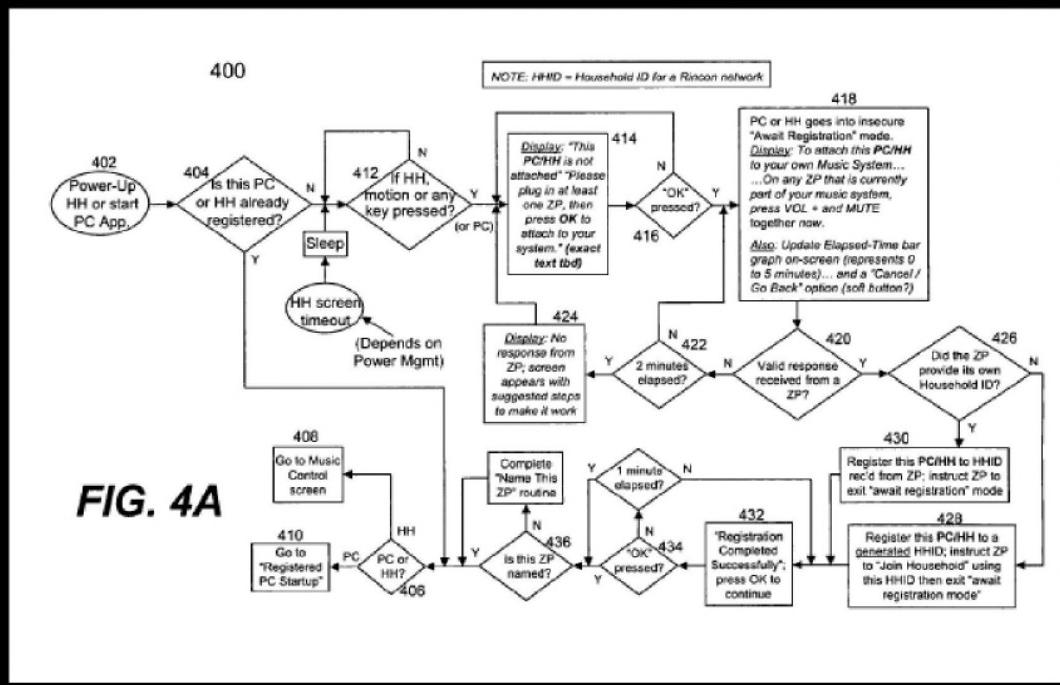
## Control – Controls a Sonos system

U.S. 8,326,951 [ADDITIONAL DISCLOSURE]

Priority 2005

8 family members issued or in prosecution

Example disclosed subject matter involves setup of multimedia players:



(57)

### ABSTRACT

Techniques for automatically configuring necessary parameters of a device to be coupled to a network with minimum human intervention are disclosed. In one embodiment, a wired and/or wireless Ad-hoc network is established to facilitate communications among a group of devices. When a new device is added to the network, a rudimentary communication path is initially established between one of the devices in the network and the new device such that necessary parameters (e.g., SSID, WEP security, channel frequency) can be exchanged for the new device to function properly in the network. To ensure the parameters are exchanged in a secure fashion, an additional public security procedure can be used between the two devices.

## Control – Controls a Sonos system

U.S. 13/338,724 *[ADDITIONAL DISCLOSURE]*

Priority 2011

3 family members in prosecution

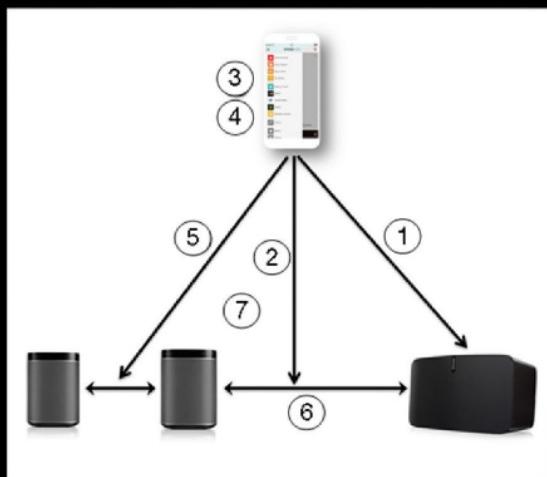
Example disclosed subject matter involves automatically selecting content for player zones:

[0012] Certain embodiments disclosed herein enable the selection of particular audio sources or tracks such as, for example, specific songs, playlists, artists, albums and/or genres. Music listeners have a variety of listening habits that depend on many conditions (e.g., playback conditions) and music properties. A playback condition may be any condition, state, attribute, characteristic and/or other situation or metric related to the playing of an audio track. The playback conditions may include time related conditions, location related conditions, and/or listener or user related conditions. A music property may include a tempo, a rhythm, a genre, an artist and/or a tagging to any of the conditions disclosed herein.

[0014] A location related playback condition may include, for example, a geographic location, a particular zone in a house or other building, a zone group, a zone room, a particular zone player in a room, a particular room, an outdoor location, an indoor location, a presence of a vehicle and/or any other location. Music listeners may listen to different tracks of music in different locations. A music listener may want to hear a particular set of songs if located, for example, poolside and a different set of songs if located, for example, in a child's nursery.



## Platform – What Makes Sonos Players and Controllers Work Together



- |                    |                   |
|--------------------|-------------------|
| ① Queue Management | ⑥ Synchronization |
| ② Group Management | ⑦ Networking      |
| ③ Setup            |                   |
| ④ Permission       |                   |
| ⑤ Bonded Zone      |                   |

## Patents Relevant To Google Today

U.S. 9,182,777	U.S. 9,170,600	(Group Maintenance)
U.S. 9,213,356	U.S. 9,207,905	
U.S. 9,195,258		
U.S. 9,348,824		(Group Identification)
U.S. 9,288,596		(Coordinator Selection)
U.S. 9,182,777	U.S. 9,288,596	(Synchronization)
U.S. 8,689,036	U.S. 9,348,354	

## Additional Disclosure

U.S. 14/521,682*	(Fault Tolerance)
U.S. 13/904,949*	(Silent Connect)
U.S. 9,219,959	U.S. 9,202,509

\*Relevant Allowed Claims

## Platform – What Makes Sonos Players and Controllers Work Together

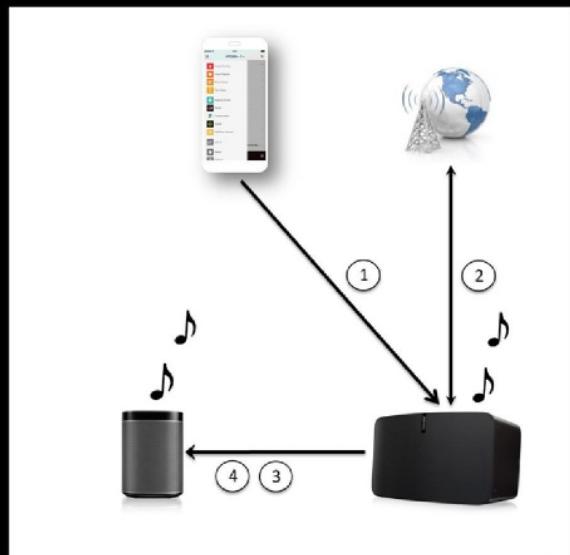
US Pat. 9,182,777

Priority 2003

Issued 2015

35 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① A player [E.G., GROUP COORDINATOR/LEADER] receives control information from a controller over a LAN
- ② The player retrieves audio information
- ③ The player transmits clock time information to at least two zones
- ④ The player transmits audio information and playback timing information to the at least two zones

## Platform – What Makes Sonos Players and Controllers Work Together

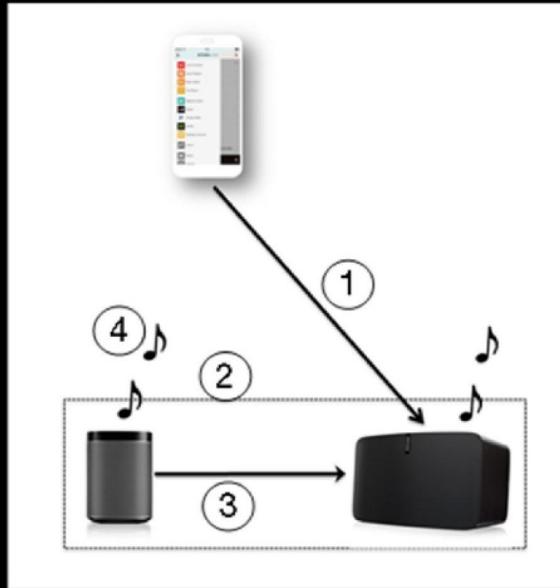
US Pat. 9,213,356

Priority 2003

Issued 2015

31 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① A player [E.G., GROUP MEMBER/FOLLOWER] receives control information over a LAN
- ② The player enters into a sync group with a second player
- ③ The player gets audio, playback timing, and device clock information from the second player
- ④ The player and second player play the audio in sync

## Platform – What Makes Sonos Players and Controllers Work Together

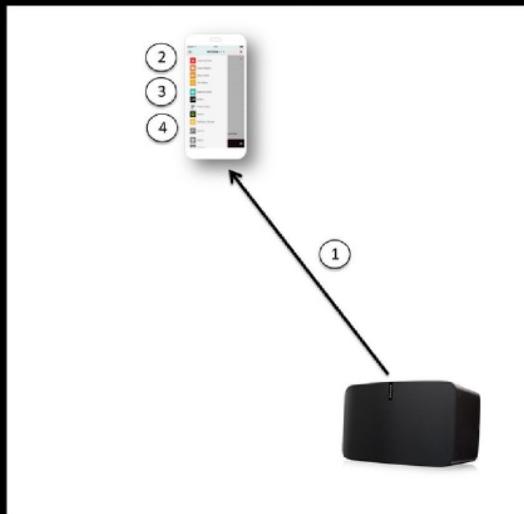
US Pat. 9,348,824

Priority 2014

Issued 2016

20 Claims (see the patent for complete claim language)

Example claim 1 involves:



- 1 Receiving and storing data indicating playback device is associated with group
- 2 Receiving input to display representations of groups
- 3 Identifying the playback device based on the group
- 4 Causing display of the group

Playback Device ID	Group ID	Group Coordinator	Display Name
Device1	Group1	Y	Living Room
Device2	Group2	Y	Dining Room
Device3	Group3	Y	Balcony
Device4	Group4	Y	Master Bedroom

FIGURE 6A

## Platform – What Makes Sonos Players and Controllers Work Together

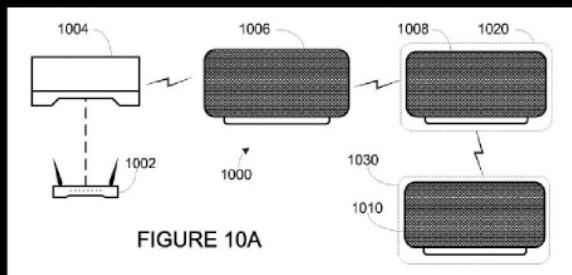
US Pat. 9,288,596

Priority 2013

Issued 2016

34 Claims (see the patent for complete claim language)

Example claim 1 involves:



- 1 Comparing wireless interface metrics of first and second playback devices
- 2 Based on comparison, designating first playback device group coordinator
- 3 Determining second playback device has higher wireless interference metric
- 4 Stopping first playback device from being group coordinator

## Platform – What Makes Sonos Players and Controllers Work Together

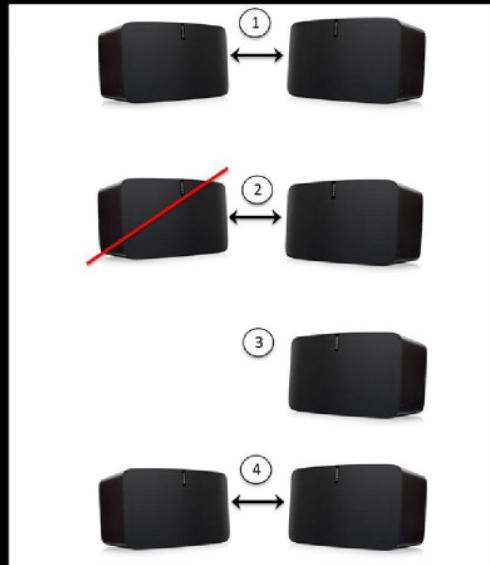
US App. 14/521,682\*    *[ADDITIONAL DISCLOSURE]*

Priority 2012

Will Issue 2016

22 Claims (see the allowed claims for complete claim language)

Example claim 1 involves:



- ① Storing indication of playback responsibility
- ② Detecting that playback device is disconnected
- ③ Detecting that playback device has reconnected
- ④ Directing the playback device to render audio content according to the playback responsibility

## Platform – What Makes Sonos Players and Controllers Work Together

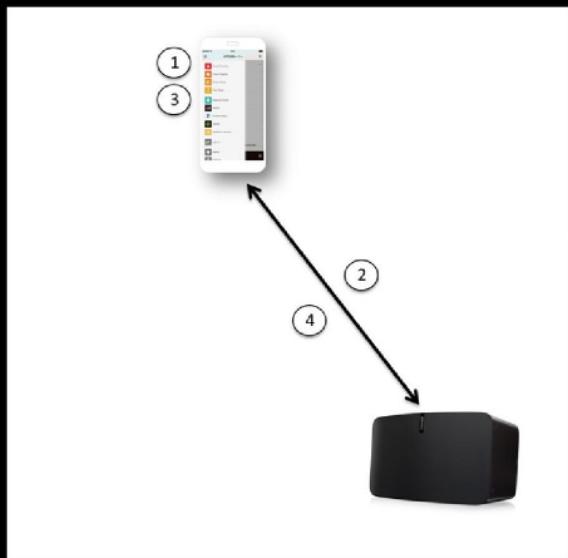
US App. 13/904,949\* *[ADDITIONAL DISCLOSURE]*

Priority 2013

Will Issue 2016

23 Claims (see the allowed claims for complete claim language)

Example claim 1 involves:



- 1 Determining that the mobile device was in a first connected state with playback device
- 2 Receiving from the playback device media items in playback queue
- 3 Displaying an indication of media items
- 4 Establishing second connected state with playback device

## Platform – What Makes Sonos Players and Controllers Work Together

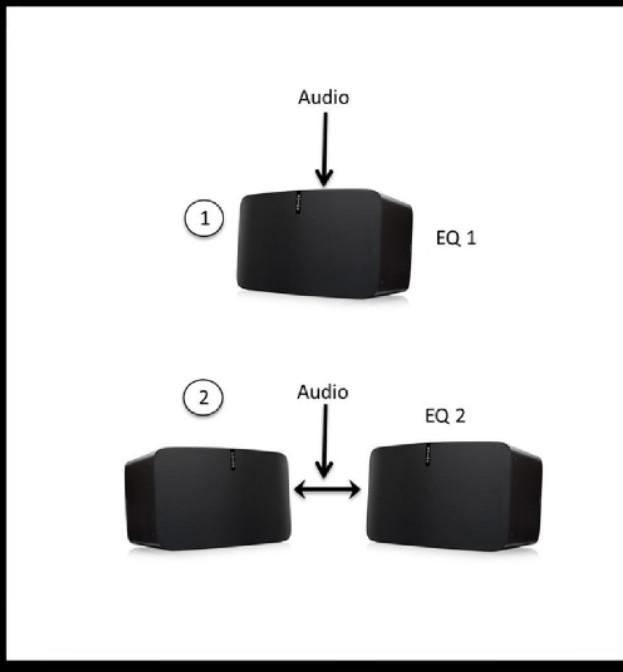
US Pat. 9,219,959 *[ADDITIONAL DISCLOSURE]*

Priority 2011

Issued 2015

22 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Player is configured for a type of pairing, performing EQ 1 prior to outputting audio
- ② The player is configured for a different type of pairing, performing a EQ 2 prior to outputting audio



## Player – What's in a Sonos Player



- |                    |                |
|--------------------|----------------|
| 1 Power Supply     | 6 Transceiver  |
| 2 Amplifier        | 7 Acoustics    |
| 3 Playback         | 8 Input/Output |
| 4 Processing       |                |
| 5 Queue Management |                |

## Patents Relevant To Google Today

NA

### Additional Disclosure

U.S. 9,252,721	U.S. 9,246,442	(Power Save)
U.S. 9,225,307		(Proximity Detection)
U.S. 8,995,240		(Player Base)

## Player – What's in a Sonos Player

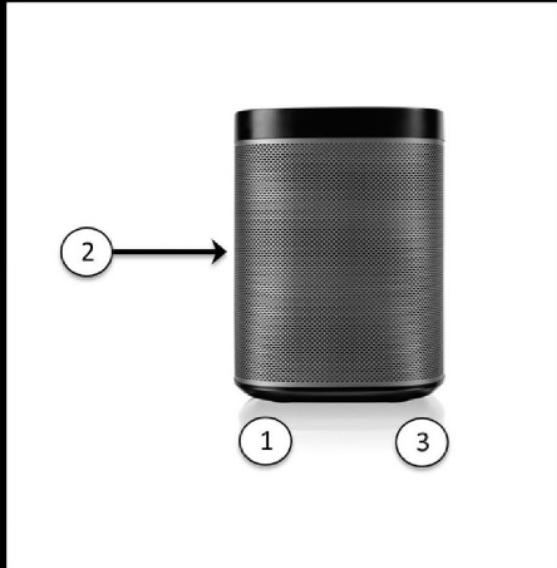
US Pat. 9,252,721 [*ADDITIONAL DISCLOSURE*]

Priority 2004

Issued 2016

20 Claims (see the patent for complete claim language)

Example claim 1 involves:



- ① Playback device operates in first power mode
- ② Playback device receives certain type of packet (e.g., from audio source)
- ③ Determine that a defined time has passed since receiving the type of packet
- ④ Playback device transitions to second power mode

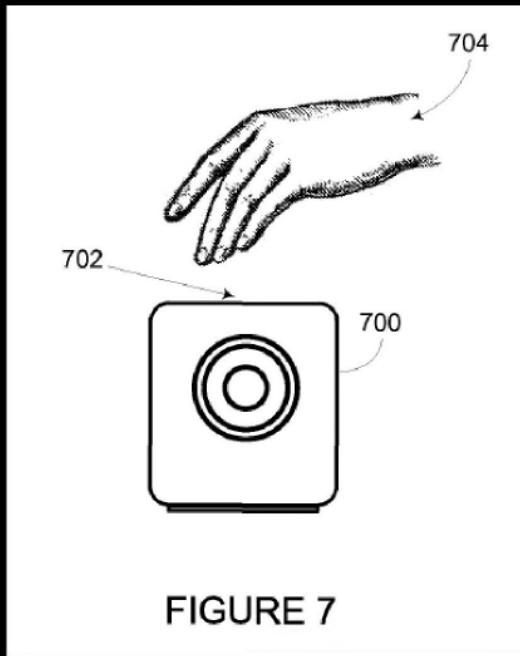
## Player – What's in a Sonos Player

U.S. 9,225,307      *[ADDITIONAL DISCLOSURE]*

Priority 2012

1 patent, 2 pending applications in family

Example disclosed subject matter involves activating interface on player based on proximity:



**[0047]** Proximity sensor 422 is a sensor able to detect the presence of nearby object, such as a human hand, without any physical contact. In an embodiment, the proximity sensor 422 emits an electromagnetic field or a beam of electromagnetic radiation and examines the return signal or field for changes. **In an embodiment, proximity sensor 422 may be used to light up or activate a user interface on zone player 400, such as capacitive buttons positioned on an exterior surface of the zone player 400.** In an embodiment, the proximity sensor 422 may be used according to the embodiments described herein to modify audio output. In another embodiment, the proximity sensor 422 may be used to do multiple functions such as activate a UI on the playback device

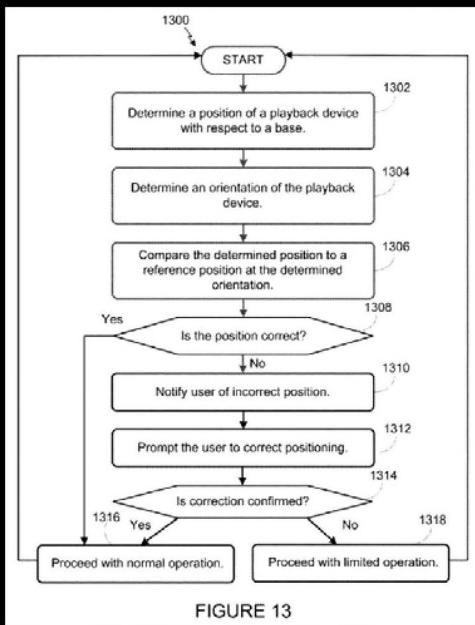
## Player – What's in a Sonos Player

U.S. 8,995,240      *[ADDITIONAL DISCLOSURE]*

Priority 2014

3 patents, 1 pending application in family

Example disclosed subject matter involves preventing/adjusting playback when player base not attached correctly:

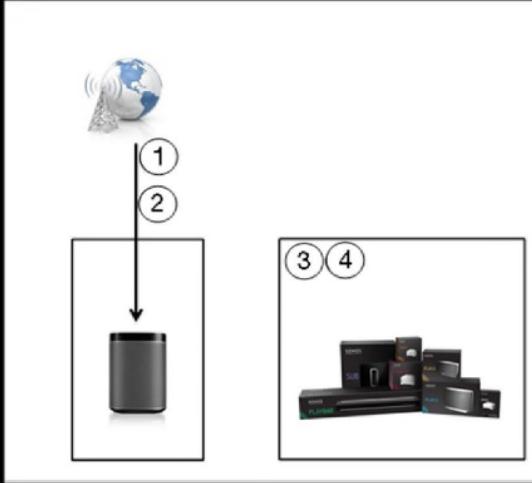


[22] Some embodiments described herein relate to a playback device capable of positioning and playback in a variety of orientations and/or positions. For example, the playback device shapes sound and/or adjusts one or more playback settings responsive to its orientation and/or position with respect to another object, a surface, etc. According to some examples, such embodiments may be implemented in an environment and system for which an ability to change an orientation of a playback device, position the playback device with respect to a base, and affect one or more playback settings of the playback device based on that orientation and/or position is desired.



## Outside the Home – Innovations that Touch a Sonos User

### Patents Relevant To Google Today



### Additional Disclosure

U.S. 9,363,255

(Cloud Queue)

- 1 Services
- 2 Data Analysis
- 3 Packaging
- 4 Marketing

## Outside the Home – Innovations that Touch a Sonos User

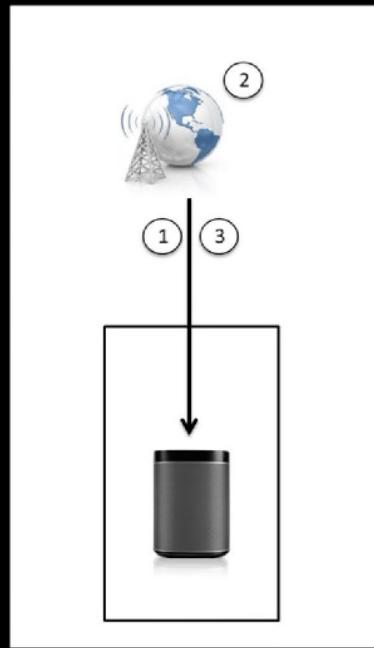
US Pat. 9,363,255      *[ADDITIONAL DISCLOSURE]*

Priority 2014

Issued 2016

2 patents, 2 allowed applications, and 7 pending applications in family:

Example claim 1 involves:



- ① Receiving request for playhead pointer in cloud queue
- ② Identifying position of playhead pointer
- ③ Sending an indication of the playhead pointer



## **Discussion & Next Steps**

**Sonos Confidential**